



State of Utah

Department of
Natural Resources

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Division of
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May 26, 2004

Wendell Owen, Mine Manager
Co-Op Mining Company
P.O. Box 1245
Huntington, Utah 84528

Re: Reformatted MRP, Co-Op Mining Company, Bear Canyon Mine,
C/015/0025, Task ID #1863 Outgoing File

Dear Mr. Owen:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by July 12, 2004.

If you have any questions, please call me at (801) 538-5325 or Joe Helfrich at (801) 538-5290.

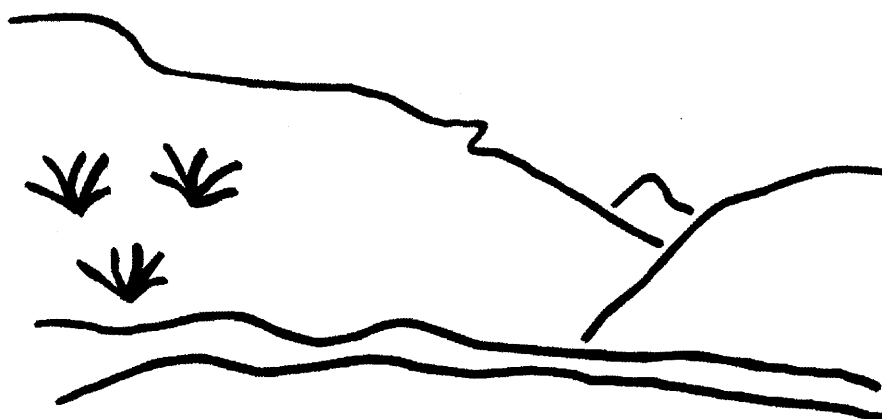
Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

an
Enclosure
cc: Price Field Office
O:\015025.BCN\FINAL\DEF03A.DOC

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Bear Canyon
Reformatted MRP
C/015/0025, Task ID #1863
Technical Analysis
May 25, 2004

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TECHNICAL ANALYSIS

TECHNICAL ANALYSIS

The Division ensures compliance with the Surface Mining Control and Reclamation Act of 1977(SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at <http://ogm.utah.gov/coal>

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings, which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference, which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

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May 25, 2004

TECHNICAL ANALYSIS

INTRODUCTION

INTRODUCTION

On December 1, 2002 Co-op Mining Company submitted an amendment that included a reformatted MRP for the Bear Canyon Mine. The proposal is intended to parallel the format for the current coal rules. Five CD's and one hard copy of the amendment were provided for review. Both the electronic and hard copies have been filed with the Public Information Center. The reformatted MRP can also be accessed at the following location:

M:\FILES\COAL\PERMITS\015\C0150025\2002\INCOMING\PLAN\12032002

The Bear Canyon Mine should be given a significant amount of credit for submitting the first electronic copy of their MRP to the Division. This innovative step forward should set a positive example for the rest of the mining community to follow. Providing the Division with an electronic format should help expedite the reviewing process. A few helpful functions include:

- Easily viewed maps
- Search (find) functions
- Hyperlinks to tables, figure, and maps.

The Permittee consolidated information from Chapters 9 and 10 in the hardcopy MRP into Chapter 3 in the electronic copy MRP (eMRP). All related vegetation and wildlife tables, figures, plates, and appendices in chapter 3 have a number "3" prefix.

One suggestion for the eMRP is to modify the internal paths leading to the main bookmark menu. Currently, the reviewer must click "go to previous page" sometimes several times to return to the main bookmark menu.

The reformatted mining and reclamation plan pertains to five different areas of operation and reclamation. These are 1) the Bear Canyon Mine area (#1 Mine), 2) the Tank Seam area (#2 Mine), 3) the Wild Horse Ridge Blind Canyon seam (#3 Mine) area, 4) the Wild Horse Ridge Tank seam (#4 Mine) area, and 5) the Mohrland area. The new submittal addresses Engineering in Chapter 5, and is written with references to the relevant sections of the R645 coal rules. Every regulation which is pertinent to the Bear Canyon operation appears to have been addressed.

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INTRODUCTION

SUMMARY OF DEFICIENCIES

SUMMARY OF DEFICIENCIES

The Technical analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the division, result in denial of the proposed permit changes, or may result in other executive or enforcement action and deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

Regulations

R645-301-121, (1) Correct the misspelled word “rations” (table 3-8) in the table index. (2) Correct the editorial errors listed as a result of incorporating missing information (3) Remove the copy of the USDA letter from Appendix 3-A as described in the Reporting of Technical Data section (4) Change the incorrect reference to the newly assigned Chapter and Appendix numbers as described in Environmental Resource Information – Fish and Wildlife Resource Information section (5) Correct the reference to Table 3-7 to reflect the correct table number as described in Reclamation – Revegetation section. 15

R645-301-121.200, The Permittee needs to (1) Either revise the statement in Section 729 or add the CHIA as Appendix 7-L; and (2) Include all water-rights information in Appendix C..... 26

R645-301-121.200, The Permittee needs to (1) Put pages 7G-132 (D-10D, max Slope), 7G-151 (D-6U), and 7G-178 (D-19U) in proper sequence in the electronic MRP (2) Explain why page 7G-153 is blank (3) Clarify: on page 7G-100 of the electronic MRP, Culvert 7C-U is identified as abandoned; however, according to the current (paper) MRP, it is 7C-D that is abandoned and calculations for culvert 7C-U are on page 7G-59 (4) Show calculations for drainage AD-20 (current page 7G-18A), which are missing from the electronic version (5) Correct or justify the Peak Flow and T results for WS-27 on page 7H-15 in the electronic MRP. These are different from those on page 7H-13 of the current MRP. Input values for Time of Concentration (T_c) and Watershed Area are not shown for WS-27 in the electronic

SUMMARY OF DEFICIENCIES

- MRP, but other factors may be producing the different Peak Flow and T results shown in the electronic MRP (6) Correctly number the pages that follow page 7H- 47 in Appendix 7-H of the electronic MRP (8) Correct, redo, or justify the calculations for C-RD21 on page 7H-114 in the electronic MRP: calculated results are different than those in the in the current MRP. The differences are because the calculations were done using a Manning coefficient of 0.3 rather than 0.03 (see page 7H-112E in the current MRP). If this is simply a data entry error, it should be corrected and the sheet redone; if the Manning coefficient has been changed for a reason, a discussion of this change needs to be included in the MRP. 44
- R645-301-121.200**, The Permittee needs to include the electronic version of Plate 6-6. 27
- R645-301-121.200**, The Permittee needs to provide the latest versions of Plates 7-1B and 7-1E. 48
- R645-301-130**, the applicant must move the reporting of technical data information to section R645-301-130 of the application. It is currently listed under section R645-301-120 that should contain information about the permit application format and contents. 18
- R645-301-140-142**, The application must include information that demonstrates and or verifies that the requirements of this section of the regulations have been met. 18
- R645-301-150-142**, The application must include information that demonstrates and or verifies that the requirements of R645-3-1-130 and 140 of the regulations have been met. 20
- R645-301-542.200**, The statement on page 5-40 that coal fines on adjacent areas will be removed from the surface of adjacent areas with water hoses or by vacuuming until only 50% of the surface is coal fines should be removed or reworded as per telephone conference on 4/27/04. 42
- R645-301-624.320 and -624.330**, Roof, floor and coal analyses are found in Appendix 6-C for samples taken through 1995. This Appendix should be updated with recent sampling such as the samples taken from RM1 in September 2002 and any additional samples taken before this submittal in 2004..... 42
- R645-301-731.311**, Appendices 6C and 5D should be updated to include all the sampling conducted of sediment pond sludge and in-mine roof, floor and coal analyses taken before this submittal in 2004..... 45

GENERAL CONTENTS

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

The Division conducted an examination of the Applicant Violator System for the Co-Op Mining Company by examining the organizational family tree on April 17, 2003.

The permittee submitted an Annual Report of Officers as submitted to the Utah Department of Commerce as part of the 2002 Annual Report, **APPENDIX C** to the Division on April 17, 2003.

A review of the currently approved mining and reclamation plan **Volume 1, Chapter 2, Ownership and Control, page 2-4, section 2.2.6, Business Designation**, designates C.W. Mining a corporation in the State of Utah, and the payer of the abandoned mine reclamation fee. A Federal identification number of the corporation is listed as 87-0399230. The applicant has reformatted this information to Chapter one.

The Officers and Directors listed within this same section of the application are identical to the information found in both the AVS check and the 2002 Annual Report of Officers to the Utah Department of Commerce.

Findings:

The information provided in the identification of interests section of the application is adequate to meet the requirements of this section of the regulations.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Analysis:

There is one notice of violation pending # N03-40-01-01 related to the monitoring of wells SDH-2, SDH-3, MW114, and MW117. There are no abatement plans required by the notice other than to monitor in accordance with the approved MRP by no later than May 12, 2003. The notice of violation does not require any information to be incorporated into the

GENERAL CONTENTS

approved MRP. Since the application was prepared on August 01, 2002 this violation was not included. Prior to final approval a copy of the violation and any pertinent information should be included in appendix 1-A. There have been no coal mining and reclamation operations in the name of Co-op Mining Company neither revoked or suspended nor has there been a performance bond forfeited in the five years preceding this review.

Findings:

The information provided in the application is adequate to meet the requirements of this section of the regulations.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

The right of entry is based on the following documents; Title or Title Insurance Policy, Deed or Trust Deed, Utah Business License, County Business License, Tax Commission License, and Coal Leases. This information was formerly included in chapter two.

A statement regarding the lease between C. O. P. and Co-Op to mine coal is provided for in Appendix 1-B, formerly included in chapter two. The letter is dated December 21, 1990 and notes that C. O. P. Coal Development Company is record of owner of the fee ground and Federal Coal leases 024316 and 024318. The property is leased to Co-op Mining Company for mining and related activities.

Findings:

The information provided in the application is adequate to meet the requirements of this section of the regulations.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

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Analysis:

The legal description for the Bear Canyon and Wildhorse Ridge facilities is provided for in the reformatted application. The description is accurate and matches the legal description provided for in the former MRP.

Chapter 5, page 5-5, section 521.133.1 indicates that it has no operations within 100 feet of public land or a public road.

Findings:

The information provided in the application is adequate to meet the requirements of this section of the regulations.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Analysis:

The permit term is for five years with the consecutive right of renewal. The permit renewal was issued in November 1, 2000 and expires November 1, 2005. The surface acreage disturbed by the mine encompasses approximately 24.92 acres and is provided for in table 1-4. Mining is expected to last for 33 years approximately 2012 with a mineable reserve of 18 million tons of coal in the Blackhawk formation. Plates 1-1 and 5-2 identify the reserves.

Findings:

The information provided in the application is adequate to meet the requirements of this section of the regulations.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Analysis:

Proof of publication is provided for in Appendix 1-D. The public notice was filed as an advertisement with the Emery county Progress and Salt Lake Tribune in accordance with the R645 rules and contains the required information. The current general liability insurance provides effective coverage for the permittee through January 1, 2005. An aggregate amount of

GENERAL CONTENTS

\$2,000,000 is provided for bodily injury and property damage; \$1,000,000 is the amount of provided coverage for each occurrence.

Findings:

The information provided in the application is adequate to meet the requirements of this section of the regulations.

FILING FEE

Regulatory Reference: 30 CFR 777.17; R645-301-118.

Analysis:

A filing fee is not required for this type of application.

Findings:

The information provided in the application is adequate to meet the requirements of this section of the regulations.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

After viewing quick links to appendices and other connections within the document, the viewer must use the document button on the tool bar to return to the main document.

Soils information previously located in Chapter 8 and Appendices is now found in Chapter 2 and Appendices, consequently all the maps and table numbers begin with 2. An .xls file accompanying the submittal provides a quick check to the changes made in Plate and Appendix titles. The Division has created the cross-references for the narrative sections and table for use when reading the previous technical reviews.

The .xls file included with the Public information Center copy of the submittal provides a cross reference for new and old plate numbers and new plate titles. It is reprinted below with map titles added by the Division. New listings are in bold. This .xls file is not found on the other electronic copies of the submittal or in the hard copy.

GENERAL CONTENTS

Plate 2-1A	Formerly 8-1	Soils Map (Main Area)
Plate 2-1B	Formerly 8-1A	Soils Map (WHR Area)
Plate 2-2A	Formerly 8-2	Main Topsoil Stockpile Area
Plate 2-2B	Formerly 8.7	WHR Topsoil Stockpile Area
Plate 2-2C	Created for WHR Tank Seam	WHR Tank Seam Topsoil
Plate 2-2D	Created for Mohrland	Mohrland Topsoil Stockpile Area
Plate 2-2E	Formerly 8-6	Tank Seam Road Topsoil Stockpile
deleted	Plate 8.4	Ballpark Topsoil Pile Area
Plate 2-3A	Formerly 8-5A	Reclamation Area (TS 1 & 2 Ballpark Area)
Plate 2-3B	Formerly 8-5B	Reclamation Area (TS 2, 3, 4, & 9, Shower House Area)
Plate 2-3C	Formerly 8-5C	Reclamation Area (TS 5-8, Load-out Area)
Plate 2-3D	Formerly 8-5D	Reclamation Area (TS 6, Mine Access Road Area)
Plate 2-3E	Formerly 8-5E	Reclamation Area (TS 10 & 11, Tank Seam Portal Area)
Plate 2-3E	Formerly 8-5E	Reclamation Area (TS 10 & 11, Tank Seam Portal Area)
Plate 2-3F	Formerly 8-5F	Reclamation Area (TS 12 & 13, WHR Access Road Area)
Plate 2-3G	Formerly 8-5G	Reclamation Area (TS 12, 14, 15, 16, & 17, WHR Portal Area)
Plates 5-2 series	Formerly 2-4 series	Surface Facilities Blind Canyon

Plates in Chapter 2 (Soils) of the document are exactly the same as the existing MRP with one exception, Plates 2-2C (WHR Tank Seam Topsoil Stockpile Area) and 2-2D (Mohrland Topsoil Stockpile Area) are new listings and neither could be accessed. Apparently they have not been created yet.

Plate 2-2F Ballpark Topsoil Pile Area has been removed from the new format. This is appropriate since the Division approved the removal of the Ballpark from the disturbed area in 2001; and, Table 2-5, Topsoil Summary, does not include the Ball Park soils for use as substitute topsoil during final reclamation. Figures 2-1 and 2-2 in Chapter 2 are the same as Figures 8.9-1 (Photographs of the Ball Park Area) and 8.9-2 (Ball Park Topsoil Storage Pile) in the approved MRP. This information has been retained for historical purposes.

The .xls file included with the submittal provides new appendix numbers. For information pertinent to soils of the site, a cross-reference is reprinted the table below. There are no new listings of appendices for soils information.

GENERAL CONTENTS

Appendix 2-A	Formerly 8A	Soil Test Reports
Appendix 2-B	Formerly 8C	Prime Farm Lands
Appendix 2-C	Formerly 8D	Substitute Topsoil Material (Downcast)
Appendix 2-D	Formerly 8E	In-Place Plant Growth Material
Appendix 2-E	Formerly 8B	SCS Soil Survey
Appendix 2-F	Formerly 8F	WHR Soil Resource Inventory and Assessment
Appendix 2-G	Formerly 8G	WHR Tank Seam Soil Resource Inventory and Assessment
Appendix 5-I	Formerly 3-L	Cut & Fill calculations (for areas TS3-9)
Appendix 5-K	Formerly 3-P	WHR Tank Seam Pad and Access Road
Appendix 5O	Formerly 3-K	Sediment Pond Material
Appendix 7K	Formerly 7K	Alternate Sediment Control Areas (includes topsoil piles)
Appendix 5D	Formerly 3-E	Toxic Materials & Handling

The .xls file included with the submittal did not itemize changes to the tables. Tables in Chapter 2 (Soils) of the document are exactly the same as the existing MRP with one exception, the Analytical Parameters For Baseline Soil Data Table 8.8-1 has been replaced with two tables (Table 2-4a and 2-4b) that were taken from the January 2003 DRAFT Division Soils Guidelines for Management of Topsoil and Overburden. Below is a cross-reference of the current and previous table numbers and new table titles in Chapter 2 of the document:

Table 2-1	Formerly 8.3-1	Soil Map Units
Table 2-2	Formerly 8.3-2	Soil Unit Acreage Within the Disturbed Area
Table 2-3	Formerly 8.9-2	Available Substitute Topsoil Material
Table 2-4a	Replaced 8.8-1	Analytical Methods for Baseline Soils Data
Table 2-4b	Replaced 8.8-1	Additional Analyses Required for Substitute Topsoil, Overburden, Spoil and Coal Mine Waste
Table 2-5	Formerly 8.9-5	Topsoil Summary Table
Table 2-6	Formerly 8.9-4	Ball Park Seed List
Table 2-7	Formerly 8.9-1	Reclamation Area Summary
Table 2-8	Formerly 8.9-3	Substitute Topsoil Summary
Table 2-9	Formerly 8.11-1	Final Grading Test Sample Density
Table 5K-1	Formerly Table 3P-1	WHR Tank Seam Topsoil Recovery
Table 5O-1	Formerly Table 3K-1	Analytical Parameters for Overburden (in Appendix 5O)

The .xls file included with the submittal did not cross reference changes to the narrative. Below is a cross-reference of the current and previous narrative sections pertaining to the soils resource information, topsoil and subsoil operations plan, soils redistribution plan, and stabilization plans.

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Section R645-301-221	Formerly 8-6	Prime Farm Lands
Section R645-301-222	Formerly 8-1 & 8-2	Soil Survey
Section R645-301-222.100	Formerly 8-1	Soil Maps
Section R645-301-222.200	Formerly 8-3	Soil Identification
Section R645-301-222.300	Formerly 8-3	Soil description
Section R645-301-222.400	No previous reference	Soil Productivity
Section R645-301-223	Formerly 8-7 and 8.7-1	Soil Characterization
Section R645-301-224	Formerly 8.9-1	Substitute Topsoil
Section R645-301-230	Formerly 8.8.1.1	Operation Plan
Section R645-301-231	Formerly 8.8.1.1	General Requirements
Section R645-301-231.100	Formerly 8.8.1.1 and 8.8.1.2 & 8.9.7	Topsoil Removing and Storing
Section R645-301-231.300	Formerly 8.11	Soil Testing Plan
	Formerly 8.9, 8.9.2 through 8.9.6	Construction, Modification and Maintenance
Section R645-301-232	No previous reference	Topsoil and Subsoil Removal
Section R645-301-232.100	Formerly 3.5.4.2	Topsoil Removal Prior to Disturbance
Section R645-301-232.200	No previous reference	Insufficient Topsoil
Section R645-301-232.300	No previous reference	Topsoil Material Less Than 6" Thick
Section R645-301-232.400	No previous reference	Area where topsoil will not be recovered
Section R645-301-232.500	No previous reference	Subsoil Segregation
Section R645-301-232.600	No previous reference	Timings
Section R645-301-233	Formerly 8.9	Topsoil Substitutes and Supplements
Section R645-301-234	Formerly 8.8.1.3	Topsoil Storage
Section R645-301-240	Formerly 8.9.1	Reclamation Plan
Section R645-301-241	No previous reference	General Requirements
Section R645-301-242	Formerly 8.10	Soil Redistribution
Section R645-301-243	Formerly 8.11	Soil Nutrients and Amendments
Section R645-301-244	Formerly 8.5	Soil Stabilization
Section R645-301-250	Formerly 8.4	Performance Standards

following table shows the appendix numbers from the older and newly formatted MRPs, titles of appendices, and numbers of pages in each appendix:

NEW FORMAT	OLD FORMAT	TITLE	NUM OF PGS
Appendix 3-A	Appendix 9-A	Vegetation analysis - reference area	35
Appendix 3-B	Appendix 9-B	Miscellaneous data	6
<i>Not included</i>	<i>Appendix 9-C</i>	<i>Vegetation monitoring</i>	
Appendix 3-C	Appendix 9-D	Shower house pad veg. and reference area	29
Appendix 3-D	Appendix 9-E	Tank seam access road vegetation	21
Appendix 3-E	Appendix 9-F	Vegetation studies for the fed. lease area	15
Appendix 3-F	Appendix 9-G	Vegetation sampling in the wild horse ridge area	40
Appendix 3-G	Appendix 9-H	Vegetation sampling in the wild horse ridge tank seam area	33
	<i>Proposed</i>		
<i>Appendix 3-H</i>	<i>submittal</i>	<i>Morland vegetation study</i>	
Appendix 3-I	Appendix 10-A	Fish and wildlife resource information	36

GENERAL CONTENTS

Appendix 3-J	Appendix 10-B	Mitigation and impact avoidance procedure, general to all	17
Appendix 3-K	Appendix 10-C	Vertebrate species of southeastern Utah	73
Appendix 3-L	Not included	Wildlife survey information	21

The following table shows the older and newly formatted MRP table numbers and titles:

NEW FORMAT	OLD FORMAT	TITLE
Table 3-1	Table 9.3-1	Vegetation types
Table 3-2	Table 9.2-1	Vegetation reference areas
Table 3-2.1		Vegetation reference areas
Table 3-3	Not included	Recommended seed mix for interim reclamation
Table 3-4	Table 9.5-2	Suggested ratios of tack to fiber for hydroseeding
Table 3-5	Table 9.5-1	Revegetation schedule
Table 3-6	Table 9.5-2	Recommended seed mix for riparian-creek bottom
Table 3-7	Table 3-7	Recommended seed mix for pinyon juniper grass
Table 3-8	Table 3-8	Suggested 'rations' of tack to fiber

Table 3-2 and 3-2.1 are repeats. Tables 3-3, 3-7, and 3-8 are new submittals. Table 3-4 and 3-8 provide the same information. The Permittee must correct the misspelled word "rations" (Table 3-8) as listed in the List of Tables (R645-301-121).

The following table shows the older and newly formatted MRP figure numbers and titles:

NEW FORMAT	OLD FORMAT	TITLE
Figure 3-1	Figure 10-1	Endangered mammalian species in relation to permit area
Figure 3-2	Figure 9-19	Correct planting procedures
Figure 3-3	Figure 9-20	Seedling storage

The following table shows the older and newly formatted MRP plate numbers and titles:

NEW FORMAT	OLD FORMAT	TITLE
Plate 3-1	Plate 9-1	Vegetation map
Plate 3-2	Plate 10-1	Wildlife use area
Plate 3E-1	Plate 9F-1	Vegetation resources map for federal lease area

The Permittee addressed a previous deficiency to incorporate pages that were missing (pgs. 9-1 through 9-6) from the newly formatted version of the MRP. The MRP now has the following editorial errors because of this incorporation:

- Table numbers are not in numerical order – the first table should read 3.1 followed by 3.2 and so on.
- Tables are not located on the page numbers as listed on the List of Tables.
- Figures are not located on the page numbers as listed on the List of Figures.
- Text refers the reader to Plates and Appendices 9-X instead of 3-X.
- Sampling Method equation sheet is void of many of the values.
- Table 3.2 (pg. 3-17) is the same as Table 3.2-1 (pg. 3-6).
- Table 3.2-1 is not on the List of Tables.

GENERAL CONTENTS

The Permittee must correct these editorial errors (R645-301-121).

Cross-reference charts are key to the understanding of previous technical memos on the Bear Canyon Mining and Reclamation Plan. **The Division should attach these cross-reference charts to previous Technical Analysis for the Bear Canyon Mine on file in the Public Information Center.**

Outside materials are cited throughout Chapter 6. Section 624.130 refers to Section R534-301-620 for information on geologic literature and references. There is no bibliography in Chapter 6. There is two reference sections in Chapter 7: one on pages 7-85 and 7-86, the other on pages 7-142 and 7-143. These include some - but not all - of the referenced materials. There is no bibliography or reference section that provides information for the following referenced materials:

AeroVironment, 1977
Cordova, 1964
Environmental Protection Agency, 1976
Doelling, 1972
Doelling, 1977
EarthFax Engineering, 1992
Jeppson et al., 1968
Paul Wier Company, 1977
Stokes, 1964

Findings:

The Division considers information in the application inadequate to meet the minimum Permit Application Format and Contents section of the General Contents regulations. Prior to approval, the Permittee must act in accordance with the following:

R645-301-121, (1) Correct the misspelled word "rations" (table 3-8) in the table index. (2) Correct the editorial errors listed as a result of incorporating missing information (3) Remove the copy of the USDA letter from Appendix 3-A as described in the Reporting of Technical Data section (4) Change the incorrect reference to the newly assigned Chapter and Appendix numbers as described in Environmental Resource Information – Fish and Wildlife Resource Information section (5) Correct the reference to Table 3-7 to reflect the correct table number as described in Reclamation – Revegetation section.

R645-301-122, The Permittee needs to provide a bibliography or reference section with complete information for all referenced materials.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

The applicant has addressed this section of the regulations. This section requires that all technical data submitted in the application will be accompanied by the names of persons or organizations that collected and analyzed the data, dates of collection and analysis of the data, and descriptions of the methodology used to collect and analyze the data. Page 1-14 section R645-301-120 states that all technical data will be accompanied by the names of persons or organizations that collected the data along with the dates collected and analyzed and methods used.

Newly formatted MRP contains the appendices described below.

Appendix 3-A contains several sections:

- Vegetation analysis of reference area conducted by Mel Coonrod in 1982/3.
- Vegetation "sampling" of tank seam access road reference area by Patrick Collins in 1993.
- Color Photograph.
- Raw Data.
- Statistical Analysis.
- Figures.
- Tables: 3A-1, 3A-2, 3A-3, 3A-4, 1, 2, 3, and 4.
- Letter from USDA Soil conservation service – Productivity for Shower House Pad and Tank Seam reference areas, which is duplicated in Appendix 3-B and is not listed in the table of contents for Appendix 3-A. This letter is more appropriately located in Appendix 3-B than 3-A. The Permittee must remove this copy of the USDA letter from Appendix 3-A as requested in deficiency R645-301-121.

Appendix 3-B contains:

- Letter from USDA Soil conservation service – Productivity for Trial and Bear Canyon reference areas.
- Letter from MEC – TES
- Letter from USFS – Plant spp.
- Letter from Bob Thompson (USFS) – Plant spp.
- Letter from USDA Soil conservation service – Productivity for Shower House Pad and Tank Seam reference areas.

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Appendix 3-C is an evaluation of the existing vegetation in the area of the shower house pad and information on the reference area for the shower house pad. Patrick Collins conducted the vegetation survey in October, 1992 for the shower house pad and September, 1993 for the reference area.

Appendix 3-D is an evaluation of the pre-disturbed vegetation in the area of the tank seam access road and pad and a comparison of the data to data collected for the selected reference area. Patrick Collins conducted the vegetation survey in October, 1992 and July, 1993.

Appendix 3-E is an evaluation of canyon Sweetvetch (*Hedysarum occidentale* var. *canone*) and the plant communities on the federal lease area. Patrick Collins conducted the vegetation evaluation in August 1997.

Appendix 3-F is a vegetation evaluation of the proposed disturbed area in Wild Horse Ridge and the reference area. Patrick Collins conducted the evaluation in 1996.

Appendix 3-G is a vegetation evaluation of the proposed disturbed area in Wild Horse Ridge and the reference area. Patrick Collins conducted the evaluation in 2001.

Appendix 3-H is pending until the Permittee submits the amendment for the Morland area.

Appendix 3-I is an overview of the wildlife for the area (unknown sources and dates).

Appendix 3-J is an overview of the mitigation and impact avoidance procedures general to all wildlife for the area (unknown sources and dates).

Appendix 3-K is the publication "Vertebrate Species of Southeastern Utah" (publ. No. 78-16). Several agencies and prepared the publication (date unknown).

Appendix 3-L is the chronology and results of raptor surveys. The Permittee conducted raptor surveys in "1998, 1991, 2000, 2001, and 2002 due to the addition of the WHR area".

The older formatted MRP states that Appendix 9-C will be incorporated after 1991 (pg. 9-10A and Appendix title page). The Permittee, however, has not incorporated this appendix/information in either the older or the newly formatted MRPs. The older formatted MRP states that aerial photographs will be taken and evaluated every 5 years starting in 1991, the photos will be available upon request, and the results will be incorporated into Appendix 9-C. In the near future, the Division will request the Permittee to clarify the reason for the omission of 'Vegetation Monitoring' (Appendix 9-C) information.

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Findings:

The information provided in the application is not adequate to meet the requirements of this section of the regulations. Prior to final approval the applicant must provide the following in accordance with:

R645-301-130, the applicant must move the reporting of technical data information to section R645-301-130 of the application. It is currently listed under section R645-301-120 that should contain information about the permit application format and contents.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

The applicant has indicated that is not necessary to address this section of the regulations. The application should provide information that verifies that maps and plans are included or updated as required.

Findings:

The information provided in the application is not adequate to meet the requirements of this section of the regulations. Prior to final approval the applicant must provide the following in accordance with:

R645-301-140-142, The application must include information that demonstrates and or verifies that the requirements of this section of the regulations have been met.

COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

Analysis:

There are several sections contained in R645-301 that have not been addressed.

GENERAL CONTENTS

Findings:

The information provided in the application is not adequate to meet the requirements of this section of the regulations. Prior to final approval the applicant must provide the following in accordance with:

R645-301-150-142, The application must include information that demonstrates and or verifies that the requirements of R645-301-130 and 140 of the regulations have been met.

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ENVIRONMENTAL RESOURCE INFORMATION

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

Basically all information from the text of Chapter 6 of the current MRP, including the appendices, has been incorporated into the electronic MRP. A few short statements that refer to other parts of the MRP have been omitted.

Findings:

Geologic Resource Information is not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the information to address the deficiencies identified in the sections that follow.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

The Permittee did not add new information to this section. The newly formatted MRP, however, is missing related information from the following pages:

OLD FORMAT PAGES	RELATED INFORMATION
5-1 through 5-3	Location of the mine site and a brief on its historic land use dating back to the Holocene epoch

The Permittee renumbered Appendix 5-A to Appendix 4A. Senco Phenix Company conducted this survey in 1984. The title of the survey is: "Archeological sampling survey of the bear canyon mine lease extension performed for the bear canyon/co-op mine through environmental industrial supply".

Findings:

The Division considers information in the application adequate to meet the minimum Historic and Archeological Resource Information section of the Environmental Resource Information regulations.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

The MRP contains a vegetation community-type survey of the reference area in Trail Canyon conducted under the guidance of Mel Coonrod in 1982 and 1983 (App. 3-A). The MRP also contains surveys conducted by Patrick Collins for the tank seam access road reference area (App.3-A) and shower house pad site and reference area (App. 3-C). The Permittee presents information in the Environmental Information section apparently related to these surveys. Although this information is somewhat disconnected, it provides scope, methods, equations, and results.

The newly formatted MRP has a section titled "Mohrland Vegetation", which was left intentionally blank.

Findings:

The Division considers information in the application adequate to meet the minimum Vegetation Resource Information section of the Environmental Resource Information regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

The Permittee addressed a previous deficiency to incorporate pages that were missing from the newly formatted version of the MRP. The newly formatted MRP now includes the methodology for aquatic resources data collection, results for terrestrial resources, wildlife resources, threatened and endangered species, raptors, and information on expected impacts of mining operations on fish and wildlife. The names of the consultants that managed the surveys and the dates of the surveys are not included.

ENVIRONMENTAL RESOURCE INFORMATION

The current MRP now includes incorrect references to:

- Chapter 10 Appendices (pg. 3-18, 3-24, 3-25, 3-26, 3-28).
- Chapter 7 (pg. 3-19).
- Chapter 7 Appendices (pg. 3-19).

The Permittee must change the incorrect reference to the newly assigned Chapter and Appendix numbers as requested in R645-301-121.

Findings:

The Division considers information in the application adequate to meet the minimum Fish and Wildlife Resource Information section of the Environmental Resource Information regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

For the most part, soils information has not changed since the last submittal two major soil amendments were received AM01A in 2001 and AM03B in 2003. Soil productivity information is found in Appendix 2-E, SCS Soil Survey and Appendix 3-B Miscellaneous Vegetation Information.

Findings:

The information provided meets the minimum soils resource information requirements of the Regulations.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Analysis:

The Permittee included the missing information as requested from the previous TA.

Findings:

The Division considers information in the application adequate to meet the minimum Land-use Resource Information section of the Environmental Resource Information regulations.

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Analysis:

There has been no change to the information provided previously.

Findings:

The Division concurs with the Natural Resources Conservation Service that there are no prime farmlands within the disturbed area.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Basically all information from the text of Chapter 6 of the current MRP, including the appendices, has been incorporated into the electronic MRP. A few short statements that refer to other parts of the MRP have been omitted.

Findings:

Geologic Resource Information is sufficient to meet the requirements of the Coal Mining Rules.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

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Analysis:

Basically all information from the text of Chapter 7 of the current MRP, including the appendices, has been incorporated into the electronic MRP. However, there are some corrections needed.

Appendix 7-L

- Appendix 7-L, the Gentry Mountain Cumulative Hydrologic Impact Assessment (CHIA) is listed in the Table of Contents and referred to several times in the MRP. However, this appendix was not included as part of the electronic MRP. (The CHIA is a document prepared by the Division and is available to the public in Adobe® .pdf format.)

Appendix 7-N-F

- Page 3 (238 of 326) of “DH-4 Slug Test #2” is out of sequence;
- All three pages (169 through 171 of 326) for “DH-1A Panther Slug Withdrawal Test #1” are out of sequence;
- The charts for “DH-4 Slug Test #2” (263 of 326) and “DH-4 Bail Test #2” (261 of 326) are switched.

Baseline Information

The printouts from the Division of Water Rights that show the water rights for the permit and adjacent areas have not been included in Appendix 7-C of the digitized and reformatted MRP. No comment or explanation is given for removing this information from the MRP.

Baseline Cumulative Impact Area Information

Section 729 of the electronic MRP refers to Appendix 7-L as the location of the CHIA. Appendix 7-L, the Gentry Mountain Cumulative Hydrologic Impact Assessment (CHIA), has been omitted from the electronic MRP. This findings document is prepared by the Division and inclusion of the CHIA in the MRP is not necessary; however, either the statement in Section 729 needs to be revised or the current CHIA needs to be added to the electronic MRP.

Probable Hydrologic Consequences Determination

Section 728 of the electronic MRP refers to Appendix 7-J, which contains the PHC determination.

Findings:

Hydrologic Resource Information is not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-121.200, The Permittee needs to (1) Either revise the statement in Section 729 or add the CHIA as Appendix 7-L; and (2) Include all water-rights information in Appendix C.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

The reformatted version of the mine plan includes maps that accurately reflect the existing surface configuration of the Mines disturbed area.

The boundary of all disturbed and proposed disturbed areas is shown on Plates 5-2A through 5-2H. The areas that are to be mined and the sequence and timing of mining are on Plates 5-1A, 1B, and 1-C. The currently approved mining and reclamation plan includes a Plate 5-1A, which shows the current mining projection the #3 Mine (Wild Horse Ridge addition) in the Blind canyon seam. It is not known if Plates 5-1B and 1C (Tank seam) actually exist at this point as it is not known if a projection exists for the #4 Mine (Tank seam, Wild Horse Ridge addition). It seems likely that Plate 5-1B would project coal extraction in the Hiawatha seam of the Wild Horse Ridge area. Based on information contained on page 5-9, the Hiawatha seam exists in the WHR addition, however the thickness of the seam in the WHR area is thin and not economically recoverable. The boundary showing all areas that may be affected by mining is shown on Plate 2-1, (Permit Boundary). Plate 5-1A is P.E. certified by Mr. Charles Reynolds. Chapter 5, page 5-5, section 521.131 indicates that all boundaries of land, and names of present owners of record of those lands, both surface and subsurface are shown on Plates 1-2 and 1-3. Boundaries of Land C.W. Mining has Right of Entry to are also shown on Plates 1-2 and 1-3. Same are P. E. certified by Mr. Charles Reynolds.

ENVIRONMENTAL RESOURCE INFORMATION

Coal Resource and Geologic Information Maps

New Plates 6-6 have not been included in the electronic MRP submittal: the file identified as "plate 6-6.pdf" contains Plate 6-5. Plates 6-1 through 6-5 and 6-7 through 6-16 cover the permit and adjacent areas.

Findings:

Maps, plans, and cross sections of Resource Information are not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-121.200, The Permittee needs to include the electronic version of Plate 6-6.

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May 25, 2004 **ENVIRONMENTAL RESOURCE INFORMATION**

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MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

The permittee utilizes roll-off metal dumpsters as well as smaller (flip over the truck cab type) dumpsters for the temporary storage of noncoal mine waste within the Bear Canyon permit area. The dumpsters are strategically located about the disturbed area based upon need and management decision, and as such are not depicted on the Surface Facilities PLATES 5-2A through 5-2H. The permittee utilizes the services of a local trash contractor to haul the noncoal waste off site to the Emery County landfill. Appendix 5-D addresses the approved plan to handle toxic or contaminated material.

Page 5-28 of Chapter 5, section **528.340, Underground Development Waste** addresses that area of mining which produces coal waste that is generally not brought out of the Bear Canyon Mines. Activities which would produce underground development waste would include the construction of ventilation overcasts, conveyor transfer points, etc. The material would generally be disposed of underground, where approved by MSHA, or would be used to fill in low areas, or to reduce resistance in the ventilation circuits by streamlining air flow over ventilation devices such as overcasts. Most mine development waste is never brought to the surface. The reformatted text indicates that this same process will be followed for all future development waste.

Chapter 5, page 5-28 section 528.400 discusses the four sediment ponds which provide the sediment control for the Bear Canyon disturbed area. Ponds A, B, and D utilize dams or embankments (pond "D", WHR addition, actually uses the constructed pad out by the portals as the embankment) to provide the impounding structure for containment. Pond "C" is an incised structure located down gradient of the bath house building and its associated parking area. All embankments have a safety factor which equals or exceeds the required standard of 1.3.

Findings:

The reformatted submittal (AM03-A) meets the minimum regulatory requirements of R645-301-528.330.

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PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR784.17; R645-301-411.

Analysis:

There are no public parks within the permit area.

The Permittee did not add new information to this section. The eMRP, however, is missing related information from the following pages:

Hardcopy Pages	Related Information
4-10	Effect of operation on adjacent and onsite land use.
4-10	Mitigation of effects of operation. Section referenced in other chapters of newly formatted MRP.

The MRP states that the Bear Creek rock shelter (site 42EM1572) is the only site within the permit area that meets the National Register Criteria of Eligibility.

Findings:

The Division considers information in the application adequate to meet the minimum Protection of Public Parks and Historic Places section of the Operation Plan regulations.

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

All coal extraction at CO-OP Mining Company is achieved using continuous miners, with shuttle cars or battery coal haulers transporting the coal from the face area to the underground conveyor dump point. Roof support is accomplished with roof bolters on development or initial extraction. Timbers and mobile roof supports, as well as the roof bolting machine are used during the secondary extraction or retreat mining process. Other mining machines used at the Bear Canyon operation include scoops, rock dusting machines, and assorted service equipment.

The retreat mining process recovers between 70 and 80 percent of the reserve. Where development mining is practiced under escarpments, no secondary extraction is practiced.

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As economically recoverable seams over lie one another in the Bear Canyon area, pillars are stacked on top of one another to the extent possible. This allows for maximum recovery of the reserve by utilizing accepted ground control methods for multiple seam mining.

Figures 5-1 and 5-2 depict the typical secondary extraction process practiced at the Bear Canyon operation. All development and retreat mining is practiced utilizing a roof and rib control plan approved by the U.S. Department of Labor, Mine Safety and Health Administration.

Page 5-13 of Chapter 5 discusses the ventilation of the Mines. This aspect of the mining process is also regulated by MSHA.

Ground water collected in the Mines is either used for dust suppression at the faces or at underground conveyor transfers. This is also approved and regulated by MSHA under the aforementioned ventilation and dust control plan.

Excess intercepted ground water is discharged to Bear Creek through the approved UPDES permit issued by the Utah Division of Water Quality. (See Appendix 7-B.)

There are no surface coal mining or reclamation activities proposed within 500 feet of the current underground workings.

Page 5-9 of Chapter 5 addresses **Coal Recovery** in the reformatted version of the mining and reclamation plan. The permittee has committed to maximizing coal recovery in the three minable seams relative to the Wild Horse Ridge addition. However, certain geologic factors including thin coal seams, thin interburden, and coal quality make coal recovery in those areas impossible or uneconomical. Mining plan, sequence and projected development for the four seams associated with the Bear Canyon project can be reviewed on Plates 5-1A, 5-1B, and 5-1C. Geologic information is included in Chapter 6 of the reformatted mining and reclamation plan.

Findings:

The reformatted mining and reclamation plan meets the minimum regulatory requirements of R645-301-522 and 523.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

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Analysis:

Page 5-16 of Chapter 5 of the reformatted submittal discusses the approved subsidence control plan very briefly, by indicating that same is included as Appendix 5-F. Plate 5-3 shows the locations of all subsidence monitoring points in the Bear Canyon permit area. The permittee has monitored twenty-one points for deflection over the #1 and #2 Mines for several years. During 2002, nineteen new monitoring points were installed in areas adjacent to the #1 and #2 Mines (500-519). Also, monitoring points 520 -545 were installed during 2002 to monitor subsidence in the Wild Horse Ridge addition. To date, only development mining has occurred in the #3 Mine (Blind Canyon seam) of the Wild Horse ridge addition. The #4 Mine (Tank seam, WHR addition) is still being accessed.

Pillars of coal are generally left underground to protect surface or underground features (seals) for the protection of persons and/or wildlife or for the protection of oil and gas wells. All are designed according to CFR requirements where relevant; other designs which are required to provide protection are made by using currently accepted engineering practice. Any submains which are developed under the escarpment area in Bear Canyon will be left as developed to minimize failure of the surface structures.

Page 5-17 of Chapter 5 indicates that boundaries defining fee surface from other surface ownership are depicted on Plate 1-3. The protection of property adjacent to the Bear Canyon permit area is provided by leaving continuous barrier pillars which are a minimum of one hundred feet in width. The reformatted version of the mining and reclamation plan indicates that this width is sufficient to prevent subsidence impacts outside of the Bear Canyon permit area from the effects of angle of draw.

The coal outcrops in the Bear Canyon area are afforded protection by limiting coal extraction to within 200 feet of same. Coal has generally either been burned or has become oxidized and is generally of low quality.

All of the coal seams in the Bear Canyon area are above any residential dwellings and subsidence caused from the impacts of mining will not affect them.

There are no public buildings, churches, schools or hospitals in the Bear Canyon permit area. A hunting lodge exists within 1,000 feet of the permit area (Wild Horse Ridge area). Page 5-19 of Chapter 5 commits to providing adequate barrier protection to prevent damage from subsidence to this structure.

Bear Canyon Creek could be affected by the extraction of coal from Federal lease U-024316. Appendix 5-C contains an explanation of the protection zone delineation.

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There are no urban areas, cities, towns, communities, industrial or commercial buildings, or major impoundments adjacent to or overlying the mineable coal seams in the Bear Canyon permit area. The Emery Water Conservancy District is aware that the Bear Canyon operation has the potential to affect Bear Creek by coal extraction from Federal lease U-024316. Thus the requirements of R645-301-525.700 have more than likely already been addressed.

The R645 requirements to repair surface or material damage to structures or water supply resources can be addressed within the performance standards of the coal rules. It is not necessary to address every such rule under 525.500.

Findings:

The permittees submittal adequately addresses the minimum regulatory requirements. Performance Standard R645-301-525.600 mandates that the permittee will comply with all provisions of the approved subsidence control plan.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR Sec. 817.99; R645-301-515.

Analysis:

The permittee's reformatted submittal addresses the reporting requirements necessary should a slide occur within the permit area in Chapter 5, page 5-2, Section **515.100**. The currently approved version of the mining and reclamation plan addresses the requirements relative to the reporting of slides in Chapter 3, page 3-37, Section 3.5.1, **Preservation of Land Use**, and page 3-40, Section **3.5.2.2, Control Measures to Mitigate Impacts**. Both versions of the mining and reclamation plan meet the minimum regulatory requirements.

The currently approved version of the mining and reclamation plan briefly discusses the three sediment ponds which are used to control the runoff from the disturbance associated with Bear Canyon #1 and #2 Mines, (See 3-5, section **3.3.8, Sedimentation Control and Water Treatment Facilities**). There is no discussion of the emergency procedures to be followed in the event that an unstable or hazardous condition would develop with any of the ponds.

The reformatted version of the mining and reclamation plan, as received on January 27, 2003 discusses the emergency procedures to be followed relative to sediment ponds on page 5-2, section **515.200, Impoundment Hazards**. The verbiage meets the minimum regulatory requirements of this section.

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The permittee's reformatted mining and reclamation plan discusses the procedures to be followed in the event that it is necessary to place the Bear Canyon operation under temporary cessation. The verbiage in the text is submitted under R645-301-515.300, and same discusses the requirement of notification to the Division if the period will extend beyond thirty days or more. The same paragraph also discusses the requirement to notify the Division of the exact number of surface acres, the horizontal and vertical extent of sub-surface strata which have been in the permit area prior to cessation or abandonment, the extent and the kind of surface reclamation of the surface area which will have been accomplished and the identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures and water treatment activities that will continue during temporary cessation.

Thus, the permittee's reformatted application has essentially addressed the requirements of R645-301-515.320, 515.311, and 515.321 all under the section enumerated **515.300**.

The permittee has not addressed the requirements of R645-301-515.310 which requires a commitment from the permittee to meet all of the requirements in their approved mining and reclamation plan, regardless of the fact that the site has gone through the necessary requirements to have been placed under temporary cessation status. This is a performance standard that can be regulated in that manner.

There is no mention made of the actions which the permittee will take to secure surface facilities in areas where there are no current operations, but in which operations are to be resumed under an approved permit, (R645-301-515.311).

The permittee has addressed the requirements of several rules with two brief paragraphs. This reviewer feels that each coal rule enumerated within the R645 rules should be individually addressed in order to determine that the reformatted version is acceptable.

Findings:

The submittal appears to be adequate in that, although each coal rule has not been specifically addressed, the reformatted text generally meets compliance requirements as they relate to the R645 performance standards.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

The Permittee somewhat addressed the deficiency to incorporate pages that were missing from the newly formatted version of the MRP. This amendment includes slightly more

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discussion on possible impacts to elk, mule deer, cougars, black bears, cottontails, and furbearers (pg. 3-43 through 3-45) than the previous amendment. The discussions on bobcats and small mammals, however, are still missing.

There are a few comments that state that surface disturbance will cause little impact to wildlife. These comments are no longer current and may be incorrect because they were based on the degree of underground mining and area of surface disturbance back in 1990. Similarly, the MRP includes a discussion on possible impacts to raptors and amphibians. The MRP refers the reader to the raptor survey, but raptor surveys are inadequate to address expected impact to raptors.

Although the Permittee did not fully address the previous deficiency, the Division will not reissue the same deficiency. The missing information from pages 10-14 through 10-21 may be need to be included in the current MRP. The Division may require the Permittee to update this section by providing the missing information, removing outdated comments relating to impact, and providing updated supporting letters from DWR during future permitting actions.

The eMRP provides a brief agenda for annual employee training on coal mining and its possible impacts to wildlife as well as mitigation practices.

The eMRP discusses steps to take in case of escarpment failure (pg. 3-52).

Findings:

The Division considers the information in the application adequate to meet this portion of the regulations with regard to the reformatting requirements. However, as part of this review there has been missing information identified in the Fish and Wildlife Information section of the Operation Plan. The information does not relate to reformatting of the MRP, therefore, DOGM did not include it as a deficiency for this amendment. The missing information from pages 10-14 through 10-21 may need to be included in the current MRP. The Division may require the Permittee to update this section by providing the missing information, removing outdated comments relating to impact, and providing updated supporting letters from DWR during future permitting actions.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

Table 2-5 Topsoil Summary is the equivalent of Table 8.9.7 in the currently approved MRP. Table 2-5 details the storage of 16,134 CY of topsoil and the 36,452 CY of additional substitute topsoil, for a total of 52,586 CY of topsoil and substitute topsoil.

The information in the reformatted plan is current with regard to location of topsoil stockpiles

Table 2-7 (Formerly Table 8.9-1) indicates that there area 28.03 "New acres" of disturbance. That figure is changed from the approved plan which indicates 27.90 acres of disturbance. The change is in the TS-16, WHR TS Lower Portal Access Road which was formerly listed as 0.76 acres. The narrative in Section R645-301-242 under RS-16 has also been modified from the approved MRP to indicate that the lower portal access road would be widened in two locations as shown on Plate 2-3G and in Appendix 5-K. The narrative indicates that 124 cu yds of topsoil was stockpiled from this location.

Findings:

The information provided meets the minimum Operations Topsoil/Subsoil requirements of the Regulations.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The newly formatted MRP includes all interim reclamation components mentioned in the older version including a earth-moving plan, hydromulch application rates, seeding plan with species mix, and monitoring plan.

Table 3-3 provides a species list of the interim seed mix with planned application rates. The rates are in units of pure live seed - pounds per acre. Seed weight differs among species,

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therefore, the unit pounds per acre does not provide an accurate number of plants that may actually develop. Providing PLS per square foot is much more descriptive, which helps the Division determine if planned seeding rate is adequate for coverage. The Division may require the Permittee to provide a planned application rate in pure live seed per square foot during future permitting actions.

The total should not exceed 100-150 pure live seed per square foot.

The interim seed mix includes five grasses and a cover crop. This seed mix originally included alfalfa, which the Permittee removed as requested.

The Permittee stated that vegetated areas adjacent to the disturbed areas are protected from coal fines by a variety of mitigation methods. However, one area within an undisturbed area below the Upper Storage Pad is apparently accumulating coal fines. The Permittee has not evaluated the impact of these coal fines on vegetation. The Division is currently working with the Permittee to incorporate best management practices to prevent and clean up unintended deposition of coal fines.

Findings:

The Division considers information in the application adequate to meet this portion of the regulations with regard to reformatting requirements. However during the review of the reformatted application it was noted that a planned application rate in pure live seed per square foot had not been provided. Because this issue did not relate to the reformatting of the MRP, DOGM did not consider it as a deficiency for this amendment. The Division may require the Permittee to provide the information during future permitting actions.

ENGINEERING

Regulatory Reference: R645-301-510 through 516

Analysis:

Sections 510 through 516 present the general requirements for engineering information required by the R645 coal rules. The reformatted submittal received on January 27, 2003 addresses section 514 but does not address the remaining information required in sections 510 through 516. The first area of text describes section **521.100 Cross Sections and Maps**, page 5-4.

The permittee's response which was received on or about March 3, 2004 makes the statement that the permittee feels that the "text outlined in sections 510-515 is deemed adequate.

Some changes have been made as per other concerns listed in the Technical Analysis. Section 516 applies to surface mines only”.

Findings:

Sections 510 through 516 list the minimum required information.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

The eleven primary roads and one ancillary road in the Bear Canyon permit area are depicted on Surface Facilities Plates 5-2A through 5-2H. The close confinement of Bear Canyon requires constant use of all mine roads. Thus, all are classed as primary, with the exception of a jeep trail (ancillary). The reformatted version of the plan has been updated to address new roads which have or are being constructed relative to the Bear Canyon #3 and #4 Mines (Blind Canyon and Tank seams, respectively, Wild Horse Ridge addition). A description and maintenance program for each road is included as Appendix 5-F.

Slope stability analyses have been performed for the following areas at the Bear Canyon Mine; the Tank seam (#2 mine), the Blind Canyon seam Wild Horse ridge addition (#3 Mine), and the WHR Tank seam (#4 Mine) access. There are sections of mine access road that will not be reclaimed, as those roads are necessary to enhance the post mining land use that is approved. The #3 Mine access also provides access to the hunting lodge located in the Wild Horse Ridge area. The retention of roads to enhance the post mining land use is discussed in R645-301-242.

The hunting lodge (which is located in the Wild Horse Ridge area) is accessed two to three times a week from May through November by members of Sportsmen's, (the lease holder of the hunting right's to the property) via the #3 and #4 Mine access roads. This is a non-mining recreational use of the Mines access roads.

Page 5-22 contains a commitment to repair any road which is damaged as the result of a catastrophic event.

Findings:

The reformatted version of the mining and reclamation plan meets the minimum regulatory requirements as they relate to roads.

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SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal Mine Waste

As noted above, the reformatted version of the Bear Canyon mining and reclamation plan, as received at the Division on January 27, 2003 does not address all of the coal rules with the State R645 rules. As example, in Chapter 5, page 5-2, the permittee references R645-301-514 Inspections. In referencing the coal rules, R645-301-514 also has requirements from 514.100 through 514.320 which reference inspections relative to sediment pond construction, final graded and vegetated fill, excess spoil, refuse piles, etc

The reformatted version of the mining and reclamation plan addresses this section of the R645 coal rules beginning on Page 5-24. The general plan is to convey coal produced underground to the surface via belt conveyors. The conveyor system which has been installed to carry product from the #3 Mine to the tippie is much more extensive than any system previously constructed at the Bear Canyon site. Numerous support structures have been built to suspend the conveying apparatus well above ground level. Environmental concerns were addressed by installing a catch pan beneath the bottom belt. There is no exposure of moving conveyor parts to wild life in the area.

Once initial development has been completed in the #4 Mine, a coal transfer raise will be constructed to transfer the Tank seam product down to the Blind Canyon seam(#3 Mine). From there, the coal will be conveyed out of the #3 Mine down the canyon to the tippie on the conveyor system described previously.

All overburden which was removed during the construction of the portal faceups was used in the adjacent pad construction. The same will be recovered during the reclamation of the site and used to return the face up areas to approximate original contour.

As previously noted, mining in the #1 and #2 Mines has ceased, and the portal area of the #2 Mine has been sealed.

A temporary coal mine waste storage pile is depicted on PLATE 5-2C in a small canyon west of the clean coal stockpile pad area. This material is generated from the dry process separating good product from reject at the tippie. Page 5-25 of Chapter 5 indicates that the size of this pile will be limited to 150 cubic yards and the storage time will be limited to a maximum

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of fifteen days. The permittee maintains a log including a sketch of the temporary pile along with dates when such material was placed. This same material was crushed and returned to the underground workings in the #1 and #2 Mines for use as road base material.

Coal mine waste generated by the tipple process preparing Wild Horse Ridge addition coals will have that material hauled to the Hiawatha (C/007/011) permit area and disposed of in slurry pond 5A (MSHA ID# 1211-UT-09-00098). This material will be tested for acid and toxic forming potential prior to shipment outside the Bear Canyon permit area.

Page 5-27 of Chapter 5 of the reformatted mining and reclamation plan section 528.321 states that "No coal processing waste has been, or is proposed to be disposed of in underground mine workings. No coal processing waste will be disposed of in underground mine workings without the express approval of the Division and MSHA".

This statement did not correlate with the text of section **528.320 Coal Mine Waste** which states (See page 5-25) "coal mine waste such as separated waste rock will be **temporarily stored** at the designated site on the main storage pad shown on Plate 5-2C." Page 5-26, paragraph one states "the material will then be returned underground and either crushed prior to transportation to use as underground road base material, or placed underground in dry areas in accordance with MSHA regulations."

As noted earlier in this document, when the #1 and #2 Mines were actively producing, waste rock was removed from the saleable product by passing the mixture past "bony pickers" on a slow moving conveyor at the processing tipple. The reject or "coal mine waste" was previously dropped through a chute where it accumulated until it was picked up by a front end loader and hauled to the "temporary coal waste storage area" depicted on Plate 5-2C. Some of this material was crushed and hauled back into the #1 or #2 Mines as road base. The material that would be acceptable for this type of use would usually be gray or white sandstone material. Shales would not be acceptable as they would not hold up under heavy mine vehicles, particularly if that material encountered ground water.

The permittee has therefore used or returned some coal processing waste to the underground works as road base material. Although the material was not separated by a "wet" coal processing regime, the material is still coal mine waste. The permittee has revised the statement on Page 5-27, section 528.321 to specify that coal mine waste will not be returned to "abandoned mines" for disposal.

As the #3 Mine is currently the area where the majority of the coal production is occurring, the potential for coal mine waste to be generated from that product does exist. It is surmised that when the permittee constructed the new tipple, a similar reject separation process was implemented using a similar "dry" method. The permittee would still have the temporary storage facility in place adjacent to the tipple area, and could still use the small reclaim belt

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/crusher arrangement for processing road base material from the #3 Mine reject. The permittee's response to the Division's technical analysis was revised by removing the statement under 528.320.

The permittee has an approval to transport coal mine waste from the Bear Canyon permit area to the Hiawatha permit area (C/007/011). As noted in paragraph four on Page 5-26, "coal

- 1) mine waste material will be tested for acid and toxic properties in accordance with Table 5O-1. Any materials found having acid and toxic properties will be disposed of in Hiawatha Slurry Pond 5A, in accordance with the Hiawatha MRP requirements for acid and /or toxic forming material.

The permittee is currently permitted to haul all coal mine waste to the former U.S. Fuel Company site at Hiawatha, Utah for permanent disposal. Chapter 5, page 5-6 of the reformatted version of the mining and reclamation plan indicates that temporary and permanent waste disposal sites will be shown on Plate 5-2.

The tippable area at the Bear Canyon operation uses a dry process (hand picking) to separate coal mine waste from product. This waste is temporarily stored in the immediate tippable area, and at one time, it was crushed and returned to the underground for use at road base. Also, in the #3 Mine (Blind Canyon seam, Wild Horse Ridge addition) portal area, small amounts of coal mine waste have been temporarily stored prior to final disposal within the Hiawatha permit area.

Statements in the currently approved plan in Section 3.6.4.5 (page 3-77) and Section 3.6.4.b (page 3-69) describe vacuuming or washing down "adjacent areas" that have been impacted by coal fines. This procedure is again described in reformatted Section 542.200b (page 5-40). "Adjacent Areas" are defined in R645-100 as areas outside the permit area that could be impacted by coal mining operations. The Division indicated in the last review of the submittal that this statement is not in keeping with R645-301-141 which requires that coal mining and reclamation operations are conducted only on those lands specifically designated within the permit area. During the course of operations, if adjacent areas are affected by fugitive dust or coal spills, then the Permittee must incorporate these areas into the Permit area and the permittee will be held responsible for complete reclamation of those areas. For post-SMCRA disturbances, there is no acceptable level of coal fines on the surface. The Division's DRAFT guidelines allow up to 10% coal fines in a pre-law area.

Sediment pond clean out is described in Appendix 5O. A maximum of 150 cu yd of coal mine waste will be temporarily stored on the main storage pad shown on Plate 5-2C. Waste rock from the Wild Horse Ridge will be hauled to Hiawatha slurry pond 5A. Prior to being hauled it will be tested according to Table 5O-1 of Appendix 5O.

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In Mine roof samples are in Appendix 6-C for samples taken through 1995. There are more recent samples that should be added to this Appendix, such as the samples taken from RM1 in September 2002. And any additional samples taken before this submittal in 2004.

Findings:

The reformatted submittal briefly addresses the engineering inspections required by the R645 coal rules and the 30 CFR Parts 75 and 77. However, the required inspections listed under R645-301-514 (excess spoil for earth and rock fills, foundation preparation, final surface drainage systems, final graded and revegetated fill, drainage systems and protective filter inspections, refuse pile and impoundment inspections during construction and quarterly as required) have not been specifically addressed. The permittee is generally aware that these are required as part of the Performance Standards.

The information provided does not meet the minimum Operation Spoil and Waste Materials requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-542.200, The statement on page 5-40 that coal fines on adjacent areas will be removed from the surface of adjacent areas with water hoses or by vacuuming until only 50% of the surface is coal fines should be removed or reworded as per telephone conference on 4/27/04.

R645-301-624.320 and -624.330, Roof, floor and coal analyses are found in Appendix 6-C for samples taken through 1995. This Appendix should be updated with recent sampling such as the samples taken from RM1 in September 2002 and any additional samples taken before this submittal in 2004.

Refuse Piles

Page 5-27 of Chapter 5 of the reformatted version (AM03-A) indicates that "C.W. Mining currently has no refuse piles."

Findings:

The information provided meets the minimum Operation Spoil and Waste Materials requirements of the Regulations.

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HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

Basically all information from the text of Chapter 7 of the current MRP, including the appendices, has been incorporated into the electronic MRP. However, there are some corrections needed.

Appendix 7-G.

Information on the following watersheds, culverts, and diversions has not been included in the electronic MRP or differs from that in the current MRP:

- Pages 7G-132 (D-10D, max Slope), 7G-151 (D-6U), and 7G-178 (D-19U) are out of sequence.
- Page 7G-153 is blank, with no explanation or obvious reason.
- On page 7G-100, Culvert 7C-U is identified as abandoned; however, according to the current MRP, it is 7C-D that is abandoned (calculations for culvert 7C-U are on page 7G-59.)
- Calculations for AD-20 (current page 7G-18A) are missing from the electronic version.

Appendix 7-H:

- WS-27, Peak Flow and T results on page 7H-15 in the electronic MRP are different from those on page 7H-13 of the current MRP. Values for Time of Concentration (T_c) and Watershed Area are not shown for WS-27 in the electronic MRP, but other factors may be producing these different Peak Flow and T results;
- There are two pages labeled 7-47 and two pages labeled 7-48 in Appendix 7-H of the electronic MRP;

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- RC-RD21 on page 7H-114 in the electronic MRP, calculated results are different than those in the in the current MRP. The differences are because the calculations wee done using a Manning coefficient of 0.3 rather than 0.03 (see page 7H-112E in the current MRP). If this is simply a data entry error, it should be corrected and the sheet redone; if the Manning coefficient has been changed for a reason, a discussion of this change needs to be included in the MRP.

Groundwater Monitoring

Cation-anion balance has been added to Table 7-13, the Ground Water Quality Parameter List.

Findings:

Operation Plan Hydrologic Information is not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-121.200, The Permittee needs to (1) Put pages 7G-132 (D-10D, max Slope), 7G-151 (D-6U), and 7G-178 (D-19U) in proper sequence in the electronic MRP (2) Explain why page 7G-153 is blank (3) Clarify: on page 7G-100 of the electronic MRP, Culvert 7C-U is identified as abandoned; however, according to the current (paper) MRP, it is 7C-D that is abandoned and calculations for culvert 7C-U are on page 7G-59 (4) Show calculations for drainage AD-20 (current page 7G-18A), which are missing from the electronic version (5) Correct or justify the Peak Flow and T results for WS-27 on page 7H-15 in the electronic MRP. These are different from those on page 7H-13 of the current MRP. Input values for Time of Concentration (T_c) and Watershed Area are not shown for WS-27 in the electronic MRP, but other factors may be producing the different Peak Flow and T results shown in the electronic MRP (6) Correctly number the pages that follow page 7H- 47 in Appendix 7-H of the electronic MRP (8) Correct, redo, or justify the calculations for C-RD21 on page 7H-114 in the electronic MRP: calculated results are different than those in the in the current MRP. The differences are because the calculations were done using a Manning coefficient of 0.3 rather than 0.03 (see page 7H-112E in the current MRP). If this is simply a data entry error, it should be corrected and the sheet redone; if the Manning coefficient has been changed for a reason, a discussion of this change needs to be included in the MRP.

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Acid- and Toxic-Forming Materials and Underground Development Waste

Section 542.200, page 5-39, refers the reader to Appendix 5D and Appendix 6C for acid toxic information. Appendix 5D Toxic Materials & Handling provides limited information on the characteristics of soil, coal and sediment pond sludge through 1989. Appendix 6C Coal & Rock Characteristics has samples of roof and floor through 1995. Both Appendices should be updated to include all the sampling taken before this submittal in 2004.

Findings:

The information provided does not meet the minimum Operation Hydrologic Information requirements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-731.311, Appendices 6C and 5D should be updated to include all the sampling conducted of sediment pond sludge and in-mine roof, floor and coal analyses taken before this submittal in 2004..

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

Chapter 5, page 5-20 addresses the requirements of the R645 coal rules relative to R645-301-526. Mine structures and facilities, utility installation and support facilities, and water and air pollution control facilities are all addressed.

Findings:

The minimum regulatory requirements have been addressed.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

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Analysis:

The reformatted version of the Bear Canyon mining and reclamation plan commits the permittee to installing and maintaining all necessary signs as required by the R645 coal rules including permittee identification signs, disturbed area perimeter markers, stream buffer zone signs, topsoil storage signs, etc. All signs will be maintained until final bond release has been approved by the Division, (See Chapter 5, page 5-8).

Findings:

The aforementioned sections adequately address the minimum requirements of this section of the regulations.

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR Sec. 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Analysis:

Page 5-16 of Chapter 5 of the reformatted version under R645-301-524 commits the permittee to follow all Utah and Federal regulations relative to the storage and use of explosives for the permittees mining purposes. This shall include 524.100 through 524.800.

Findings:

Although the permittee has not addressed each regulation listed under R645-301-524, the commitment made within the reformatted mining and reclamation plan is adequate, and appears to meet the minimum regulatory requirements

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected Area Maps

Maps have been digitized.

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- Plate 7-1B in the current MRP is the 9th revision, dated approved on 02/10/2000: the electronic MRP contains the 8th version, dated approved on 09/04/1996;
- Plate 7-1E in the current MRP is the 5th revision, dated approved on 02/10/2000: the electronic MRP contains the 4th revision, dated approved on 4/15/1998.

Certification Requirements

The reformatted version commits the Permittee to preparing all maps showing relevant information by or under the direction of a registered certified professional engineer. This rule clarifies the need for certification of the following maps which are required to be included in a mining and reclamation plan; mine workings, surface facilities and operations, surface configurations including final contours, hydrology, geologic cross sections, plans and engineering designs, excess spoil, durable rock fills, coal mine waste impoundments, primary roads, and variance(s) from approximate original contour.

Findings:

Maps, plans, and cross sections of Mining Operations are not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-121.200, The Permittee needs to provide the latest versions of Plates 7-1B and 7-1E.

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GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The Reclamation chapter of the newly formatted MRP includes a three-phase plan, timetable, revegetation species and seed mix application rates, planting methods, mulching techniques, and revegetation success standards. The three-phase reclamation plan includes:

- Earth moving.
 - Recontouring of area.
 - Smooth contouring of existing soil.
 - Creating small indentations with a grouser.
- Seeding and mulching: drill or broadcast seeding.
- Monitoring.

Overall, the sequence of methods and application rates of mulch, fiber, and tackifier are somewhat confusing. There are many paragraphs discussing final reclamation in the Operation section and paragraphs discussing interim reclamation in the Reclamation Plan - Revegetation section. The Division may require the Permittee to provide a clear plan presenting interim and final reclamation methods, steps, and application rates during future permitting actions.

The italicized paragraphs below present other issues that the Permittee will need to start considering.

The interim and final reclamation plan, in both MRP formats, are lacking the use of deep gouging and noxious weed-free hay/straw. The Permittee plans to use fiber matting for steep areas (pgs. 3-59, Mulching Techniques and 3-65, Revegetation: Mulching and Other Soil Stabilizing). Recently, however, the Permittee tried deep gouging on a steep slope that may prove successful. The plan should reflect plans showing possible changes in technique to use gouging for all sites including steep slopes.

Incorporating hay/straw (especially hay) during gouging is the current standard treatment for soil stability. The Permittee must include the use of deep gouging with incorporation of noxious weed-free hay/straw to bring the interim and final reclamation plans to

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current standards (R645-301-333). The Permittee may refer to the Vegetation Guidelines for methods and application rates.

The final reclamation plan mentions the application of wood fiber/hay/straw as an amendment (pg. 3-59) and a mulch (pg. 3-65). One of the goals of incorporating hay/straw during gouging is to amend the soil with organic material. Hay is better than straw as a soil amendment because it has a higher N:C ratio. The Permittee may decide to use hay rather than straw.

One of the goals of using a mulch following seeding is to provide surface protection from rain and wind. The MRP states the use of wood fiber, hay, straw, and fiber matting as possible mulches. The Permittee plans to hydromulch at rate of 120 pounds per acre on slopes less than 2:1 and use fiber matting for steeper slopes (pg. 3-59). The plan is less clear on page 3-65, which mentions a variety of possible mulches and does not provide a rate. It is unclear when the Permittee plans to use hay or straw as mulch and at what rate.

The Vegetation Guidelines recommends the following:

- *Hay/straw: noxious weed free*
 - *Usually applied at time of gouging.*
 - *Applied at a rate of 0.5 to 1 ton per acre.*
- *Wood fiber mulch:*
 - *Applied during hydroseeding.*
 - *Applied at a rate of 0.5 to 1 ton per acre.*
- *Tackifier: Applied according to manufacturer instructions.*
- *Control matting: Follow manufacture recommendations.*

The Permittee must use of adequate hay/straw, wood fiber mulch, and tackifier to bring the plan to current standards (R645-301-333).

The last step of site preparation includes the application of a tackifier over the wood fiber mulch at the rate of 60 pounds per acre (pg. 3-65). The Permittee, however, is not clear whether they will only apply the tackifier only in coordination with application of a wood fiber. The Permittee must clarify reclamation plans.

Tables 3-4 and 3-8 show the suggested ratios of tackifier for hydroseeding. The amount of tackifier varies with slope from 14 to 64 degrees and ranges from 60 to 160 pounds of tacifier per ton of fiber mulch. There is a reference to the use of hydromulch at rate of 1,500 to 2000 pounds per acre.

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The Permittee mentions using "weed free" material (pg. 3-59). Product may be certified as "noxious weed free", but is rarely weed free. The MRP should accurately reflect the type of product planned for reclamation.

Findings:

The Division considers information in the application adequate to meet this portion of the regulations with regard to reformatting requirements. However during the review of the reformatted application it was noted that the italicized paragraphs above presented issues that the Permittee will need to start considering. Because these issues did not relate to the reformatting of the MRP DOGM did not include them as deficiencies for this amendment. The Division may require the Permittee to provide a clear and updated plan presenting reclamation methods, steps, and application rates during future permitting actions.

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The Permittee did not add new information to this section. The newly formatted MRP, however, is missing related information from the following pages:

Hardcopy Pages	Related Information
4-15 through 4-20	Financial feasibility and attainment, final surface configuration (section referenced in Chapter 9 of newly formatted MRP), compatibility with surrounding land uses, compatibility with land use policy and plans.
4-20 through 4-24	Safety, environmental protection, pollution control compliance, socioeconomic considerations, service areas (also Table 4-2), growth capability, and labor forces (also Table 4-3).

Most of the information from pages 4-15 through 4-20 related to compatibility with land use policy and plans. Specifically, the Permittee left out text that discussed management objectives relating to: vegetation, range, soil, mineral activities, archeology/paleontology, timber, fire, roads, and recreation.

The Permittee states that the postmine land use is designated for grazing, wildlife habitat, and some recreation.

Findings:

Information provided in the application is considered adequate to meet the minimum Postmining Land Uses section of the Reclamation Plan regulations.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

Analysis:

The Permittee explains that there is no impact to perennial waters of the permit area (pg. 10-22). The newly formatted MRP further details possible impacts to perennial waters. Page 3-28 states that there are no "high quality streams" in the surface operation areas, hence the Permittee expects little impact to aquatic life. The Permittee supports this expectation with the following:

- Huntington Creek is the closest high quality stream to the permit area.
- Huntington Creek is 1.5 miles from the nearest surface operation site.
- Co-Op's sediment control structure serves to protect impact to Huntington Creek.

The Permittee does not plan to submit a mitigation plan for Bear Creek at this time (pg. 3-28).

Refer to Operations for discussion on expected impacts to wildlife.

Findings:

The Division considers information in the application adequate to meet the minimum Protection of Fish, Wildlife, and Related Environmental Values section of the Reclamation Plan regulations.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

The backfilling and grading of the site to reach approximate original contour will be performed by using standard types of machinery. According to page 5-39, general shaping of

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the disturbed area will not commence until all Mine drift entries and coal transfer boreholes are sealed, backfilled and compacted.

All toxic materials generated will be disposed of according to Appendix 5-D.

Surface areas which have been disturbed from the accumulation of coal fines will be evaluated prior to the initiation of coal fines activities. The permittee's currently approved plan indicates that "if coal fines are evident in quantities that exceed 50 pct (percent) of the exposed ground, then such material will be removed." The currently approved plan also states that "it should be noted that the existence of small to moderate amounts of coal fines has not been established as detrimental to either soils or vegetation; therefore, amounts less than the 50 pct (percent) figure cited above will not be removed." Although the permittee has conducted a previous study of the affect of coal fines on revegetation, this subject is one which has really not seen extensive evaluation. The Division may need to re-evaluate this topic in the future. Any determination as to the affect or adequacy of the backfilling and regrading of the Bear Canyon permit area and associated coal fines impacts will need to be reevaluated at that time.

Upon completion of the rough grading and topsoil application process, all operational areas will be scarified by gouging to a depth of approximately eight inches with a track hoe. This surface roughening technique will reduce compaction and minimize topsoil slippage, and enhance moisture retention, assisting in the re-establishment of vegetation.

Slope reclamation will be performed as depicted on Figure 5-4, Typical Slope Reclamation, by using the extensive reach of a track hoe boom to bring material up from the outslope. That material will then be used to fill the cut area.

Pages 5-43 and 44 of Chapter 5 describe the backfilling and grading plan for the Tank seam access road (#2 Mine) reclamation, which is occurring as this document is being compiled. After fill has been placed to reestablish the approximate original contour, topsoil will be placed using a backhoe. Boulders will be embedded into the surface to achieve a 32.75 percent rock cover. Again, using the backhoe, the surface will be ripped and scarified (pocked) to aid in water retention for revegetation purposes.

Seeding the reclaimed area by hand will follow. Erosion control matting will then be installed and the material will be held in place with wire staples.

Pages 5-46 through 5-48 describe the reclamation plan for the Wild Horse Ridge addition, from facilities removal through the backfilling and grading and seeding process. Final surface contours are depicted on maps found in Appendices 5-I, 5-J, and 5-K.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

Page 5-30, of Chapter 5 of the reformatted mining and reclamation plan, paragraph one commits the permittee to cementing all exploratory holes, boreholes and wells with an approved slurry. "C.W. Mining is committed to plugging all drill holes with 5 feet of cement as required by rule M3(5) UMLR Act of 1975". **This commitment does not meet the requirements of R645-301-551 or 765.** The permittee's latest response contains (See page 5-30) removed the previous commitment and replaced it with a commitment to meet the requirements of R645-301-551.

Paragraph two of page 5-30 commits to the backfilling of shafts from the bottom to the collar with incombustible material. A seal consisting of a six inch thick concrete cap will then be placed over the shaft.

The sealing of mine entries is discussed on pages 5-30, 5-31 and 5-32 of the reformatted Chapter 5. Although the text appears to adequately describe the method used to seal each of the mine entries involved, the ultimate approval for such action is required to be approved through the U.S. Department of Labor, Mine Safety and Health Administration, Denver, Colorado.

Findings:

The minimum regulatory requirements have been addressed.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

There are no changes to the previously approved reclamation plan.

RECLAMATION PLAN

Findings:

The information provided is meets the requirements of the Regulations for Topsoil/Subsoil Reclamation Plan.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Information same as presented in Operations.

Findings:

The Division considers information in the application adequate to meet the minimum Contemporaneous Reclamation section of the Reclamation Plan regulations.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Page 3-50 (Reclamation – Revegetation) states that riparian areas will not receive a seed mix strictly specified as “Riparian”. Rather, these sites will receive a pinyon-juniper-grass seed mix along with woody plant seedlings. The plan presents two tables showing seed mixes: Table 3-6 provides the “Recommended Seed Mix, Riparian-Creek Bottom”, while Table 3-7 provides the “Recommended Seed Mix, Pinyon-Juniper-Grass”. The Division may require the Permittee to clarify the table titles. It seems that the Permittee should replace the wording in Table 3-6 to reflect seedling species and not “seed mix”.

Reclamation of the riparian sites will include planting of seeds (Table 3-7) and seedlings (Table 3-6). The table includes directions for the collection of nearby willow seedlings. The Division no longer recommends removing plant material from surrounding riparian areas because of possible impacts to riparian areas during the collection process. There are dependable sources for nursery stock available in Utah. The Division may require the Permittee to remove comments relating to the removal of woody plant material on site during future permitting actions.

RECLAMATION PLAN

The name of the final reclamation seed mix is "Recommended Seed Mix, Pinyon-juniper-grass" (Table 3-7). The table provides a list of the native species and planned application rates. The rates are in units of pure live seed - pounds per acre. The Division may require the Permittee to provide a planned application rate in pure live seed per square foot during future permitting actions.

The total should not exceed 100-150 pure live seed per square foot.

The Permittee plans to broadcast seed and plant seedlings using the following methods:
1) Broadcast seeding either by hand or using the hydroseed method and 2) Planting seedlings in the spring or fall within two years following seeding. The Permittee provides a detailed description of planting methods for seedlings. One suggestion is to prepare hole size following current recommended practices: 1) Width: approximately 2-3 times the width of the root ball and 2) Depth: approximately equal to the length of the root ball.

The newly formatted MRP also provides discussion on success standards for revegetation and protection of wildlife. The Permittee must correct the reference to Table 3-7 (pg. 3-65; Revegetation: Mulching and other soil stabilizing) to reflect the correct table number as requested in deficiency R645-301-121.

Findings:

The information in the application is adequate to meet this section of the Reclamation Plan regulations. However during the review it was noted in the MRP that the applicant needed to: Clarify the title for Table 3-6 • Remove comments relating to the removal of willow plant material on site • Provide a planned application rate in pure live seed per square foot. Furthermore, the Permittee provides a detailed description of planting methods for seedlings. The Division recommends adopting current recommended practices as described above. Because these issues did not relate to reformatting of the MRP DOGM did not include them as a deficiencies for this amendment. The Division may require the Permittee to address these items during future permitting actions.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

There has been no change to the information presented for stabilization of surface areas.

RECLAMATION PLAN

Gouging to an 8 inch depth on the pad areas is referred to in Section 542.200 page 5-41. Tank seam gouging to a depth of 8 – 12 inches is described on page 5-44. Section 542.200 page 5-47 refers the reader to Appendix 7-K for information on deep gouging during Wild Horse Ridge reclamation. Appendix 7-K refers to the use of gouging only as part of the alternate sediment control during reclamation of BTCA "Z," the ASCA for WHR topsoil stockpile area and conveyor access road slopes (pg 7K-31).

The Permittee should investigate the use of deep gouging 18 - 24 inches on the reclaim site. Deep gouging has been used successfully on reclamation sites through out Utah and has been described in The Practical Guide to Reclamation in Utah, page 66. This publication is available on the web at <http://www.dogm.nr.utah.gov>

Mulching is described in Section R645-301-341 page 3-41 as well as on pages 5-44 and 5-48 of Section 542.200. The Permittee intends to use excelsior blanket on slopes of 2h:1v.

Section 542.200, page 5-44 indicates that rocks will be embedded into the upper surface as described on page 5H-27 (in a May 10, 1994 letter from Dames and Moore). As stated on page 5-44, the goal will be to obtain a minimum cover of 32% rock, similar to the reference area. Wind protection through the use of boulders is also described in R645-301-412.110 Method for Achieving Post-Mining Land Use.

Findings:

The information provided meets the minimum requirements of the Regulations to provide stabilized surface areas.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

Analysis:

Page 5-36 of Chapter 5 indicates that the approved post mining land use for the Bear Canyon permit area will be grazing, recreation, wildlife and timber (recovery).

The permittee commits to reclaim all disturbance associated with the development of the Bear Canyon Mines as rapidly as possible to a condition equal to or exceeding the pre-mining conditions of the permit area. The steps which will be taken to achieve this are briefly described on pages 5-35 through 5-37. All surface structures will be reclaimed in a manner which will minimize impacts to fish, wildlife and related environmental values.

RECLAMATION PLAN

The reformatted version of the mining and reclamation plan indicates that some utility features which have been installed as part of the mine development will be buried in place, rather than removing them.

Noncoal waste items generated by the reclamation of the storage facilities will be disposed of in manners, which have been previously approved by the Division. Asphalt paving material will be disposed of in the State permitted Nielson Construction Company landfill. Concrete will be broken during the reclamation process and placed against cut banks, then covered with at least three feet of backfill material. Reclaimed steel will be salvaged or taken to the Nielson landfill for disposal.

The permittee's reformatted plan indicates that the Nielson Construction Company landfill is the designated disposal site for all non-coal solid waste items.

Findings:

The information provided is adequate to meet the requirements of this section of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

The reclamation timetable submitted as part of the reformatted mining and reclamation plan anticipates that the reclamation of the Bear Canyon site will take approximately a year and a half, weather permitting. Revegetation will be completed in the fall of the final season of reclamation.

Findings:

The information provided is adequate to meet the requirements of this section of the regulations.